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The certification procedure which is used by the American Institute for Design and Drafting applies to secondary, post-secondary, and collegiate programs offering occupational education for junior draftsmen, draftsmen, design draftsmen, and engineering designers. The major sections in this report outline: (1) eligibility requirements, (2) curriculum evaluation procedures, (3) curriculum requirements, (4) course descriptions, (5) student admission requirements, (6) certification renewal, and (7) classification of certification and fees. (EM)

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A PROGRAM OF CURRICULA EVALUATION AND CERTIFICATION PROCEDURE.

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AMERICAN INSTITUTE FOR DESIGN AND DRAFTING

DESIGN-DRAFTING CERTIFICATION

I. INTRODUCTION

Recognizing that the educational training of designers and draftsmen is of signal importance to industry and the profession, the American Institute for Design and Drafting has put into effect Certification of schools.

When requested by school officers, curricula are evaluated by representatives of AIDD through interviews with faculty and graduates, by the use of references, by examination of data from catalogs, texts, courses, and other school publications, and by inspection of school facilities.

II. PURPOSE OF CERTIFICATION

The purpose of Certification is to initiate a procedure whereby AIDD can be of service to prospective design and drafting students by giving recognition (Certification) to schools whose curricula meet the standards established and approved by AIDD, and which are adequate for preparation of graduates for job placement in their respective fields.

The plan is also introduced as a means of encouraging schools to develop and upgrade design-drafting curricula in order to better prepare students to meet industry's requirements.

III. ELIGIBILITY FOR CERTIFICATION

The reliability of the following criteria depends upon the establishment and adherence to an equitable procedure of evaluating.

1. Types of Schools Eligible

The types of schools eligible for Certification are those offering courses leading to a certificate or degree in Design-Drafting. These are:

A. Branches or divisions of colleges and universities.
B. Private, public, or endowed technical institutes.
C. Junior or Community colleges.
D. Private, public or endowed trade schools.
E. Private, public, or endowed high schools.
F. Correspondence schools.

Note: Correspondence schools may be awarded a special Certification which specifically states that such is based only on criteria that directly apply to correspondence work.

2. Types of Curricula Certified

The programs may be geared to several different levels and offered in any one of the various design-drafting fields, supported by specified related or background studies. The Graphics courses shall be technological in nature, with emphasis placed on the graphical rather than analytical solution of problems. See Part V for further specifications at the various levels.

3. Length of Curricula

The programs shall be at least two academic years of full-time residence work at post-high school level, or equivalent in part time or extension work. The high school classification is intended as for 3 years of full time senior high school.

4. Method of Instruction

The method of instruction shall be the normally accepted classroom, lecture, and laboratory methods.

5. Faculty Qualification

Instructors should be experienced and competent, and should have proven ability in the subjects they teach. It is desirable that some of the faculty instructors be graduates of four-year colleges, preferably engineering colleges. Participation of faculty members in technical societies is an indication of a good professional attitude. The ratio of instructors to students should be sufficient (normally 1:20) to provide adequate instruction to each student.

6. Physical Plant

Floor Space: Space should be adequate to accommodate all students, and should be so utilized as to avoid the use of labs and drawing rooms by more than one class at a time. Equipment: Equipment in drawing labs should be equivalent to the minimum acceptable equipment used in industry, and should be supplied in sufficient quantity to permit usage by all students without "doubling up". All equipment should be in good condition and provisions should be made for adequate storage. Laboratory equipment should be adequate for student use and for demonstration.
Rooms: Classrooms should be of adequate size with blackboard space and seating facilities necessary for the accomplishment of satisfactory lecture and recitation conditions.
Lighting: All classrooms and laboratories should be properly and adequately lighted. It is desirable to have a minimum of 100 foot-candles in drawing areas.
Housekeeping: Work areas should be neat and clean. Premises should be cleaned daily. The students should be instructed and supervised in the proper care and usage of equipment and premises.

7. General Requirements

A school which offers an organized curriculum of two or more years directed toward the preparation of the designer and draftsman may make application for Certification.

Programs which have been in effect less than 5 years may be granted Certification subject to review each year within the period.

Changes in curricula to meet initial or continuing Certification should be substantiated as actually being in effect and publicly announced. A current catalog or other literature available to students and the public which shows the required changes, may be considered adequate proof.

8. Ethical and Financial Status

The school must have a reputation for legitimate operation, and have made worthwhile contributions to the educational advancement of its students. It shall be fair and factual in all its dealings with students and the public, and maintain a high standard of ethics in all operations. The school shall give evidence of having adequate financial support for normal operation.

A school is assumed to have the respect and approval of administrators and officers of local industries which have departments aligned with drafting or design.

9. Industry Advisory Committee

In order to promote the best cooperation between Industry and the school and to assist the school in carrying out a broad and effective program of instruction in Graphics and related subjects, the American Institute for Design and Drafting recommends that the school have or establish an ADVISORY COMMITTEE composed essentially of representatives of local industries. The size of the Committee is left to the discretion of the school, but where possible should contain one or more members of AIDD.

It shall be the responsibility of the school to report to AIDD the names of all members of this Committee, with their address, business connection, and title.

The Committee should meet periodically at the school for observation, discussion, and advice. It is expected to promptly inform AIDD of any unusual developments in the school affecting the Graphics instruction, whether favorable or unfavorable. A written report yearly on the general complexion of the school should be submitted both to AIDD and to the school administration.

Favorable yearly reports will have paramount importance in Certification renewals. See Part X.

IV. EVALUATION

The purpose of evaluating design-drafting curricula is to establish a means by which the various ones can be resolved into components for comparison of value and determination of adequacy.

It is intended that the basis for evaluating curricula be sufficiently broad and liberal in scope to permit evaluators to work within reasonable limits in determining value to curricula and eligibility for Certification. Since there is considerable diversity in design-drafting courses and variations of the many types of schools that offer them, it is necessary to set certain minimum requirements.

1. Statement of Purpose

For each curriculum there shall be a definite statement mentioning the types and levels of employment open to graduates of that curriculum. The extent to which the curriculum enables the student to handle the type and level of employment claimed shall serve as one basis for Certification.

2. Attainment

One indication of the quality and content of any curriculum may be found by examining the following factors:

A. The percentage of graduates placed on jobs for which they are trained.

B. The job level attained by graduates after a five year period.

Each application for Certification shall include an employment report indicating the type and level of employment obtained by graduates and the names and addresses of firms employing the graduates.*

3. Curriculum Analysis

In view of the diversity of methods for evaluating credit, the following method shall be utilized as a basis for equitable evaluation and comparison.

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* The examining committee is instructed to recognize that complete records of graduates five years after graduation is very difficult to obtain; however, the school should make this record as complete as possible. A record of continuing education is accepted in lieu of employment record.

Assuming that two hours of preparation or outside problem work by the student is required for each hour of lecture or recitation, the total work load may be gauged by the formula 3T + L = C, where T is theory or recitation contact hours, L is laboratory contact hours (includes work on board in drafting room), and C is curriculum work load.

The application of the above formula cannot alone serve as a basis for conclusion, but it does produce a figure below which special consideration should be given with respect to quantity of content and academic level of courses included in the curriculum.

4. Academic Level

The academic level of approved curricula shall be senior high school or post high school, including 2, 3, and 4 year curricula. The employment record of graduates must indicate employment at a level indicated by the "statement of purpose".

V. AIDD CLASSIFICATION OF CURRICULA

It is recognized that instruction and training in the field of Drafting and/or Design can be given in various degrees and levels of accomplishment. As a result of various conferences with industry representatives and with school administrators and teachers, it was concluded that the Certification plan be carried out at four levels of attainment. The outlines following indicate the specifications applying to the four classifications of programs, ranging from senior high school to a baccalaureate degree. It is not intended hereby that the terms limit or establish industry classifications or identification having similar designations.

1. Three Year Senior High School - Junior Draftsman

Units (2 Semesters)	Subject
3	Mechanical Drawing
1	Machine Shop
1	Algebra
1	Plane Geometry
½	Trigonometry
1	Science (Physics, Chemistry, or Biology)*
1	American History
3	English
1½	Electives (include Solid Geometry where possible)
13	

*Physics recommended where possible

2. Post High School Program - Draftsman
Two years, 56 Semester Credits or 2800 Curriculum Work Hrs.

Sem. Credits	Subject
5	Basic Technical Drawing
3	Descriptive Geometry
8	Drawing Electives *
4	Intermed. Algebra and Trigonometry
4	Plane and Solid Geometry
8	Machine Shop and Manufacturing Processes
3	Properties of Materials and Laboratory Testing
8	Applied Physics and Mechanics
6	English, Economics, Humanities
7	Electives
56	

*Drawing Electives: Architectural, Electrical, Mapping, Machine, Piping, Structural, Production Illustration, Technical Sketching, Developments (Sheet Metal), Nomography, Advanced Descriptive Geometry, Tool Detailing, Jig and Fixture Detailing.

3. Junior College or Technical Institute - Design Draftsman
Four or more semesters, minimum 70 Semester Credits

Sem. Credits	Subject
5	Basic Technical Drawing
3	Descriptive Geometry
4	Drafting Electives (see list under preceding curriculum)
8	Advanced Physics
4	Advanced Chemistry
4	Advanced Algebra and Trigonometry
6	Analytic Geometry and Calculus
2	Elements of Surveying or Manufacturing Processes
3	Engineering Statics
3	Strength of Materials
4	Properties of Materials
6	Machine Shop
2	Laboratory Testing
3	Elementary Machine Design
4	Electric Circuits and Machinery
6	English (Reports and Oral)
3	Economics
70	

4. Four Year Degree Program - Engineering Designer

The Four Year Program is assumed to meet all the requirements shown under the Junior College outline. In addition, inclusion would be expected of such subjects as Advanced Machine Design, Dynamics, Fluid Mechanics, special department design courses, and other subjects required for the degree. The design courses must include not only computation but a finished drawing board product.

The foregoing specifications are subject to future modification, as educational or professional developments indicate may be desirable.

VI. SUBJECTS

1. Drawing Courses

A curriculum for "Junior Draftsman" or "Draftsman" should contain not only basic but advanced drawing courses in one or more specialized fields. It should have a complete foundation in the theory and technique of drafting and a highly developed manual skill in the use of instruments and the ability to do outstanding free-hand lettering and sketching in the area of specialization.

For "Design Draftsman" or "Engineering Designer", the curriculum must be equally complete in the theory and technique of drafting, but must also extend into the field of engineering and design with which it is associated. It must encompass the ability to make use of graphic principles in the solution of problems relating to design-drafting.

It is understood that drawing courses involve not only drawing board practice in a formal class, but also lecture, discussion and individual guidance from an instructor present in the class, as may be suitable. Outside study assignments or problem work are ordinarily a part of drawing courses, and as a measure of work load, or "curriculum hours", by the formula 3T + L = C. Descriptive Geometry is included under this heading.

"Design" courses should include a finished drawing board product, as well as computation and access to and use of catalogs, standard parts lists, commercial accessories, etc., as may be suitable.

2. Allied Technical Courses (includes basic sciences)

Courses which equip the drafting student with technical information directly related to his ultimate duties as a draftsman, and without the use of which he could be no more than a copyist, are classified as Allied Technical Specialties. In the area of Machine Drafting, courses falling under this heading include such subjects as Metallurgy, Mechanics, Materials Testing, Metals Shop, Production Planning, Chemistry, Physics, etc.

It is important that these courses be taught from the viewpoint of their use to the designer and draftsman, and not as technical subjects unrelated to the special field being studied.

3. Mathematics

The "Junior Draftsman" program should include Algebra, Geometry, and Trigonometry. For the "Draftsman" program, additional Algebra and Trigonometry at the college level is expected. In the two

higher classifications, Analytic Geometry and Calculus are specified. It is expected the treatment will be oriented towards the needs of the profession.

4. General Subjects (English, Communications, Leadership, Humanities, and others)

Subjects which contribute to the over-all improvement of a student and to his development as a citizen, but which are not directly related to his activities as a designer or draftsman, are included under this heading. All four programs include an allowance for studies under this general heading

VII. STUDENTS

1. Admission Requirements

The quality of any training program is dependent to a great extent upon the prior preparation of students accepted for participation.

The minimum admission requirements for the student (except for "Junior Draftsman") should be as follows:

A. Graduation from an accredited secondary school or the equivalent education substantiated by the method recognized by the state in which the institution is located.

B. A demonstrated desire and capacity for the satisfactory achievement of the work outlined in the curriculum to be undertaken.

C. Three units of English

D. One unit of Algebra

E. One unit of Science, preferably Physics

F. One unit of Plane & Solid Geometry is recommended, or to be made up upon admission.

VIII. PROCEDURE

1. Initial Request

A letter directed to the American Institute for Design and Drafting requesting consideration toward Certification should be the first step in the procedure. If the Drafting-Design program is currently in effect, copy of school catalog should be submitted, showing details of program, description of courses, credit, etc. If program is only in planning stage, preliminary copy of whatever is contemplated or possible should be submitted, along with the general catalog.

A school may desire a consultation with an Educational Committee officer or consultant, and a visit to the school will generally be practicable to arrange. If timed at the convenience of AIDD when visits elsewhere are being made, no charge would be made. If a special trip is involved, the school may be asked to cover transportation costs. This procedure is generally advantageous in establishing and defining a curriculum to be newly offered, or when planning to expand or upgrade details to meet AIDD approval.

2. Curriculum Analysis, Evaluation, Consultation

Program copy or curriculum questions received from a school will be referred to Educational Committee consultant or other designated member. Analysis and evaluation, and/or recommendations for strengthening or augmenting, will be forwarded to the school. Further information on doubtful details may be asked. The classification of Certification, toward which the school is pointed, will be indicated or verified.

A consultation visit to the school, if advantageous in resolving questions, may be arranged. Refer to Part V for curriculum specifications.

If or when the curriculum is assured adequate, the school will fill out and submit a Survey Report form, giving various details of administration, aims, equipment, facilities, staff qualifications, enrollment, graduates record, curriculum etc.

3. Submission of Survey Report and Fee

The Report will be studied and verified for adequacy and inclusion of all provisions previously agreed upon or specified, and for acceptable quality of all other details of administration and operation. The established fee (see Part XI) should accompany submission of the Report.

If the curriculum is favorably verified, and if the Report seems otherwise not to have any significant deficiencies or ommissions, AIDD will appoint an official visitation committee to inspect the school.

If the Survey Report and other data on the school indicates the curriculum does not meet AIDD standards, the school will be so informed of the rejection. Ten percent of the fee will be retained, and the balance returned to the school.

4. Visitation and Final Evaluation

The visitation committee, after examining the Survey Report and and other data, will arrange with the school for a suitable date for the visit. This will include interviews and inspection to

determine:

A. Adequate physical facilities and equipment of the school.
B. Qualifications of instructors.
C. Number of students enrolled and average size of classes.
D. Scholastic work and attendance of students.
E. Requirements for graduation
F. Morale and discipline in the students.
G. Administration and instruction in the drawing courses, and quality of students' work.
H. Records and grades kept on the students' work in the school, and of placement of the graduates.

Some testimonials from graduates will be sought, to determine subsequent standing and progress on the job.

All data on the school, including foregoing inspection report, Survey Report, and correspondence file, will be given to the Chairman of Educational Division for final review, judgment, and decision (including classification). The school will be so informed.

5. Award of Certification

Assuming favorable completion of the foregoing, AIDD will confer with the school as to date and details of formal presentation of Certificate, as may be suitable or desired, and arrange for the ceremony thereof. AIDD will release publicity on the affiliation to local press and to national professional publications.

The awarding of the Certificate is evidence that the curriculum has been inspected and evaluated by American Institute for Design and Drafting, and that it has been found satisfactory as claimed in the Statement of Purpose.

A school whose drafting or design curriculul is officially certified by AIDD is entitled to use and publish for the duration of Certification the statement:

"This curriculum is approved by the American Institute for Design and Drafting in the classification of _____"*

*Junior Draftman, Draftsman, Design Draftsman, or Engineering Designer. See Part V.

IX. CERTIFICATE CARDS TO STUDENTS

Upon request by the school, pocket Certification cards will be provided students who have properly completed all requirements of the approved curriculum. The school must submit names of such

students, with transcript of courses taken (including grades and credits), and affidavit from a school officer.

Such a card will identify the student graduate to industrial employers as having attained (in the designated classification) the education and proficiency assured in the AIDD specifications.

X. CONTINUATION AND RENEWAL OF CERTIFICATION

1. Certification is normally for a period of five years.

   For certification to be currently in effect, a school must give evidence that curriculum changes or physical improvements upon which approval was based have actually been made or are in progress.

   Copy of school catalog or other published material available to students and the public shall be considered adequate proof of recommended changes or requirements.

2. Certification is renewable on request of a school under either of the following procedures.

   A. If the yearly reports of a school's Advisory Committee (see Part III, Section 9) have been favorable and indicate improvement or at least no deterioration in aims, facilities, curriculum, staff, and enrollment, and the yearly published bulletin or catalog (with details of curriculum and operation) corroborates, the approval of AIDD's Education Committee may be assumed, and Renewal Certification will be authorized for the same further period as the original. The Fee for this renewal shall be $5. See Part XI.

   B. If there have been no yearly reports, or unfavorable ones, from the school's Advisory Committee, or if the school's yearly publications indicate unfavorable aspects, in the judgment of AIDD's Education Committee, the Certification will terminate, unless the school requests and agrees that a completely new study and evaluation be made. In this case, Certification renewal will involve the same procedure and criteria as the original. The fee for this renewal procedure is the same as for the original.. See Part XI.

3. If renewal is not accomplished by either of the foregoing procedures, the school will be requested to return its Certificate to AIDD, and to discontinue in any way announcing or utilizing any expression of AIDD approval of curriculum.

XI. CLASSIFICATIONS OF CERTIFICATION AND FEES

The Board of Directors of AIDD has authority to establish or approve various classifications of Certification as may be proposed by Educational Division or other members, and to revise such as conditions may

warrant. The Board, with advice of the Administrative office and Finance Committee, will also authorize a suitable scale of fees for Certification.

The classifications and fees thereto are authorized as follows:

Junior Draftsman, Technical High School	$25.00
Draftsman, Vocational or Post High School	$75.00
Design Draftsman, Junior College or Technical Institute	$75.00
Engineering Designer, 4 year B.S. Degree College	$100.00
Renewal Fee (see Part X).	$ 5.00